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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Christopher Haydn Lowery

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05/21/2004

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EXAMINER

KANG, DONGHEE

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

09/938,407

Applicant(s)

LOWERY ET AL.

Examin r

Donghee Kang

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 22-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34-44 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,9-11,24,27 and 29-31 is/are rejected.
- 7) ☒ Claim(s) 3, 7-8, 12-15, 22-23, 25-26, 28, & 32-33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1-2, 4-6, 9-11, 24, 27, & 29-31** are rejected under 35 U.S.C. 102(e) as being anticipated by Collins, III et al. (US 2002/0187571).

Re claim **1**, Collins et al. teach a light emitting device comprising (Figs.4 & 8A):

a light emitting diode (10); a submount (28); a phosphor material (12, Fig.8A)

disposed around at least a portion of said light emitting diode; and

an underfill material (66, Fig.4B) between a first surface of the light emitting diode and a first surface of the submount. Collins et al. do not expressly teach that the underfill has characteristics to reduce contamination of the light emitting diode by the phosphor material. However, it is inherent in Collins's device because the underfill of Collins comprises a same material with the present invention. Therefore, the underfill of Collins also has characteristics to reduce contamination of the light emitting diode by the phosphor material.

Re claim **2**, Collins et al. teach the light emitting diode having a reflective layer (24, Fig.8A).

Re claim **4**, Collins et al. teach the submount comprising a silicon substrate (paragraph 0021).

Re claims **5 & 6**, Collins et al. teach the phosphor material comprising strontium sulfide (paragraph 0026):

Re claims **9-10**, Collins et al. teach the underfill comprising silicon dioxide (paragraph 0028).

Re claim **11**, Collins et al. do not expressly teach the filler is reflective. However, the filler material of Collins would have same function as applicant's claimed term "reflective" because it has precisely the same material (AlO, SiO or SiN).

Re claim **24**, Collins et al. teach the light emitting diode is mounted on the submount.

Re claim **27**, Collins et al. teach a light emitting device comprising (Figs.4 & 8A):  
a semiconductor light emitting device (10); a submount (28); a material containing a phosphor disposed around at least a portion of semiconductor light emitting device (12, Fig.8A); and an underfill (66, Fig.4B) disposed in at least a portion of a space between the semiconductor light emitting diode and the submount such that the underfill forms a physical barrier. Collins et al. do not expressly teach that the underfill prevents the phosphor-containing material from occupying the space. However, it is inherent in Collins's device because the underfill of Collins comprises a same material and structure with the present invention. Therefore, the underfill of Collins also prevent the phosphor-containing material from occupying the space.

Re claims **29-30**, Collins et al. teach the underfill comprising silicon dioxide (paragraph 0028).

Re claim **31**, Collins et al. do not expressly teach the filler is reflective. However, the filler material of Collins would have same function as applicant's claimed term "reflective" because it has precisely the same material (AlO, SiO or SiN).

***Allowable Subject Matter***

3. Claims 34-44 are allowed.

Claims 3, 7-8, 12-5, 22-23, 25-26, 28, & 32-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

4. Applicant's arguments filed March 10, 2004 have been fully considered but they are not persuasive. Applicant argues that Collins's silicon oxide insulating layer do not have characteristics to reduce contamination of the light emitting diode by the phosphor material. This is not convincing.

See MPEP 2100.

Where applicant claims a composition in terms of a function, property or **characteristic** and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection. "There is nothing inconsistent in concurrent rejections for obviousness under 35 U.S.C. 103

and for anticipation under 35 U.S.C. 102." *In re Best*, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977). This same rationale should also apply to product, apparatus, and process claims claimed in terms of function, property or characteristic. Therefore, a 35 U.S.C. 102/103 rejection is appropriate for these types of claims as well as for composition claims.

Applicant argues that the characteristics clearly encompasses more than just material. Not every underfill layer formed of a given material will have characteristics that reduce contamination. For example, a silicon dioxide containing underfill that completely fills the space between the diode and the submount may reduce contamination.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a silicon dioxide containing underfill that **completely fills** the space between the diode and the submount may reduce contamination) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### **Conclusion**

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghee Kang whose telephone number is 571-272-1656. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Donghee Kang  
Primary Examiner  
Art Unit 2811